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## WHO ARE YOU, INVESTOR: MR. SPOCK, CAPTAIN KIRK OR SOMEWHERE IN BETWEEN?

**A Behavioural Finance exploration and suggestions for better informing investors about complex investment products through information disclosure**

### I. Introduction

Star Trek is a well-known science fiction television show as well as a popular movie franchise. One consistent theme pervading Star Trek is embodied by two men, Mr. Spock and Captain Kirk. Both of these characters make important decisions about for instance the survival of the star ship Enterprise and its crew. In these situations, Mr. Spock is very rational and almost always emotionless, basing decisions on facts and probabilities. In contrast, Captain Kirk makes decisions based on his emotions and his 'gut feeling'.

In the financial markets, investors have to make decisions on a daily basis as well. However, a recent study concluded that around 60% of sales in complex financial products across the EU may be deemed unsuitable for consumers.<sup>1</sup> The 'Woekerpolis' and 'Effectenlease' scandals in the Netherlands are just two of the many examples of the mis-selling of financial products to consumers.<sup>2</sup> In its efforts to prevent these kinds of practices in the future and to restore trust in the financial markets, the European Union heavily relies upon information disclosure by financial institutions.<sup>3</sup>

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<sup>1</sup> Commission Staff Working Document 'Impact Assessment Accompanying the Proposal for a Regulation of the European Parliament and of the Council on key information documents for investment products', SWD(2012) 187, p. 22; Synovate 2011.

<sup>2</sup> These products allowed retail investors to purchase securities with borrowed money (Effectenlease) and life insurances (Woekerpolis) with an investment element. Commissie Geschillen Aandelenlease 2004; Autoriteit Financiële Markten 2008. About the miss-selling of financial products to consumers across the EU: Moloney 2012, p. 176; Ferran 2012, p. 249.

<sup>3</sup> See about the underlying ideology of information disclosure Moloney 2010, p. 53 ff.

Who are you, Investor

The retail investment market is dominated by so-called ‘Packaged Retail Investment and Insurance Products’ (PRIIPS). A PRIIP could be described as:

*“...a product where the amount payable to the investor is exposed to fluctuations in the market value of assets or pay-outs from assets, through a combination or wrapping of those assets, or other mechanisms than a direct holding.”<sup>4</sup>*

In April 2014, the European Parliament and the Council reached an agreement on a mandatory Key Information Document (KID) for those kinds of investment products.<sup>5</sup> Recently, the Council of the European Union has adopted a Regulation regarding an information document designed specifically for non-professional investors (so-called retail investors).<sup>6</sup> The two main objectives of this document are:<sup>7</sup>

1. Improving the *comprehensibility* of financial products;
2. Improving the *comparability* of financial products.

The focus on information disclosure through such a document as an instrument of retail investor protection suggests a belief that retail investors will make better choices if they are provided with information about financial products. As the European Commission states, such documents serve as ‘the foundation’ for investment decisions by retail investors.<sup>8</sup>

Research in the field of Behavioural Finance, a science that uses psychological and sociological concepts to describe and analyse both market ‘behaviour’ and behaviour of (financial) market participants, suggests that the link between information disclosure and informed and optimal decision-making is not always clear.<sup>9</sup> Suboptimal consumer decisions arise from a tendency in people to act irrationally. This irrational financial

<sup>4</sup> Commission Staff Working Document ‘Impact Assessment Accompanying the Proposal for a Regulation of the European Parliament and of the Council on key information documents for investment products’, SWD(2012) 187, p. 32.

<sup>5</sup> European Commission, *Proposal for a Regulation of the European Parliament and of the Council on key information documents for investment products*, Strasbourg: 2 July 2012 (COM(2012) 352 final) and European Parliament 2014.

The introduction of an information document for consumers of investment products is not a new phenomenon. Examples of such information documents at a national level are the financial information leaflet for complex financial products (*Financiële Bijsluiter*) used in the Netherlands, a Key Features Document for ‘packaged products’ used in the United Kingdom and a Product Information Sheet (*Produktinformationsblatt*) in Germany.

<sup>6</sup> The European Parliament and the Council, *Regulation of the European Parliament and of the Council on key information documents for packaged retail and insurance-based investment products (PRIIPs)*, Brussels: 24 October 2014. The articles and recitals referred to in the text are part of this Regulation.

<sup>7</sup> European Parliament and the Council 2014, recital 15.

<sup>8</sup> European Commission, *Proposal for a Regulation of the European Parliament and of the Council on key information documents for investment products*, Strasbourg: 2 juli 2012 (COM(2012) 352 final), p. 16. In other words on p. 15: “Retail investors should be provided with the information necessary for them to take an informed investment decision and compare different investment products...”

<sup>9</sup> Shiller 1999. Behavioural Finance is a positive science (as opposed to normative science).

behaviour results from 1) personal factors, such as (the lack of) financial knowledge and cognitive limitations, 2) social factors such as culture, the complexity of the financial market and financial products and 3) mental shortcuts such as biases and heuristics.<sup>10</sup>

This paper will focus on the mental shortcuts that may result in suboptimal financial decisions. Insights from Behavioural Finance are especially valuable in this regard. They allow for a greater predictability of suboptimal investors' behaviour, since this behaviour is caused by certain heuristics (mental shortcuts) and biases (errors caused by these mental shortcuts). Despite individual differences, these heuristics and biases are common among all investors.

This paper, which is meant as a first exploration of the subject, aims to examine 1) to what extent the proposed KID is likely to be effective in achieving its objectives, 2) whether it needs to be improved and 3) if so, in what way. First, the focus is on the proposal for a Key Information Document for PRIIPS (section 2). Section 3 examines the so-called 'normative model', which describes the mechanisms behind human rational behaviour. Section 4 will focus on the 'positive model', which describes how people actually behave.<sup>11</sup> Finally, section 5 will explore ways in which the proposed information document could be adjusted in order to improve EU consumers' investment decisions.

## II. A new information document for retail investors: a brief overview

Investing in the financial markets was once a privilege for the fortunate few. Now, it has become an essential part of EU citizens' everyday life. Financial services, such as loans, mortgages, investments and insurance facilitate citizens' full participation in the economy, enabling them to plan for the long term and protecting them from unforeseen changes in circumstances. A single retail market, which has been the overall EU objective in the last decade, is also of great significance for the EU economy.<sup>12</sup>

The retail investment market is dominated by PRIIPs. These products, taken together, make up 10 trillion Euros in the European financial markets.<sup>13</sup> PRIIPs have four characteristics. They:<sup>14</sup>

- combine exposures to multiple underlying assets;
- are designed to deliver capital accumulation over a medium- to long-term investment period;
- entail a degree of investment risk;
- are usually marketed directly to retail investors.

<sup>10</sup> Capuano and Ramsay 2011, p. 77–167.

<sup>11</sup> Given the size of this paper, only a selection of the existing heuristics and biases can be discussed. For more details, see section 4.

<sup>12</sup> White Paper on Financial Services 2005–2010, COM (2005) 629; Green Paper on Retail Financial Services, COM (2007) 226; Initiatives in the Area of Retail Financial Services: Accompanying Document to the Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions (COM, 2007) 724 final.

<sup>13</sup> European Commission 2014, p. 1.

<sup>14</sup> European Parliament and the Council 2014, art. 4.

These complex financial products can, broadly speaking, be categorized into four groups: investment funds, insurance-based investment products, retail structured securities and structured term deposits.<sup>15</sup>

The introduction of a KID aims to increase the comprehensibility and comparability of PRIIPs by the creation of a standardized and readily understandable document for retail investors containing information about the main features of an investment product, such as the costs and risks involved.<sup>16</sup> The KID will answer a standard set of questions, such as: 'What is this product?', 'What are the risks and what could I get in return?', 'What happens if [the name of the PRIIP manufacturer] is unable to pay out?', and 'What are the costs'.<sup>17</sup> The proposed information document is designed for the retail investor rather than the professional. It should help them make a more informed decision on whether a financial product is suitable for them.

PRIIPs manufacturers should draw up the information document and publish it on their website before the product can be sold to retail investors.<sup>18</sup> In addition, retail investors must receive the KID before a binding agreement is made.<sup>19</sup> To promote comparability, every document will have the same structure and should be drawn up in a standardised format.<sup>20</sup> It must be an accurate, fair, clear, and not-misleading document.<sup>21</sup> Furthermore, the KID must be a short document with a maximum of three sides of A4-sized paper.<sup>22</sup>

The details of the information to be included in the KID and the presentation of this information will be further harmonised by means of so-called Level 2 instruments, which are delegated acts.<sup>23</sup> These instruments must:

*"...take into account existing and ongoing research on consumer behaviour, including results from testing the effectiveness of different ways of presenting information with consumers."*<sup>24</sup>

However, up until now, very little research has been conducted into the way in which the provision of information to investors by means of a short information document can be made effective. Existing research mostly concerns self-reporting with the investors' perception of understanding a document as the prime consideration, instead of the question whether the information is actually understood.<sup>25</sup> Besides, such research hardly

<sup>15</sup> European Commission 2014, p. 1.

<sup>16</sup> European Parliament and the Council 2014, recital 15.

<sup>17</sup> European Parliament and the Council 2014, art. 8.

<sup>18</sup> European Parliament and the Council 2014, art. 5 paragraph 1.

<sup>19</sup> European Parliament and the Council 2014, art. 13 paragraph 1.

<sup>20</sup> European Parliament and the Council 2014, recital 17.

<sup>21</sup> European Parliament and the Council 2014, art. 6 paragraph 1.

<sup>22</sup> European Parliament and the Council 2014, art. 6 paragraph 4.

<sup>23</sup> European Parliament and the Council 2014, art. 8 paragraph 5.

<sup>24</sup> European Parliament and the Council, recital 17. It is striking that article 8, paragraph 5 merely provides that 'the capabilities of retail investors...' need to be taken into account when developing draft regulatory technical standards. This formulation is less concrete.

<sup>25</sup> See e.g. FSA 2003; IFF and YouGov 2009 and Millward Brown / Centrum 2004. The most relevant research in this context was done by Chater, Huck and Inderst 2010. However, this research has some limitations as well, see e.g. p. 298–299.

ever takes into account what is generally known about the ways in which investors read a text, understand it, and make decisions.<sup>26</sup> It also remains to be seen to what extent the results of existing research apply to the KID. Among others the wide geographic reach of this document, the fact that many different kinds of products are considered PRIIPs, and the complexity of these products could prevent this.

### III. The Normative Model: Homo Economicus

According to Jeremy Bentham, a British philosopher, people seek the pursuit of pleasure and the avoidance of pain.<sup>27</sup> This idea is, to some extent, related to the basic assumption of the proposed information document. As already described, this document is primarily based on the assumption that investors act rationally and will attempt to maximize their utility by choosing the financial product with the highest monetary gains, just like Mr. Spock from Star Trek. In the ideal situation an investor takes into account all relevant information and in the end comes up with the best decision given the circumstances. In other words: such a rational investor is capable of making optimal investment decisions.

This idea is based on the normative model, which describes the assumed mechanisms behind human rational behaviour. Some characteristics of this normative model are:

- a. Actively open-minded thinking: Openness to information that is not consistent with people's opinions or beliefs.
- b. Probability theory: Applying mathematical and statistical rules to determine the probability of events to occur.<sup>28</sup>
- c. Logic: A decision should be based on valid reasoning.<sup>29</sup>
- d. Expected utility theory: Based on this theory the optimum action on a problem which involves risk<sup>30</sup> can be determined by calculating the utility of each possible outcome and multiply the outcomes by their probabilities.<sup>31</sup> Based on the results, people should choose the option with the highest expected utility.

Through the years, researchers have found that people often do not behave in accordance with the normative model. For example, Kahneman and Tversky introduced an

<sup>26</sup> Chater, Huck and Inderst 2010 does take this into account.

<sup>27</sup> Bentham 1789/2000, p. 14.

<sup>28</sup> The classical definition of probability is e.g. described by Ash (2008, p. 1) as follows: "...the probability of an event is the number of outcomes favourable to the event, divided by the total number of outcomes, where all outcomes are equally likely...".

<sup>29</sup> For example based on the Bayes' theorem, however, in practice people are prone to ignore the base rate, which is called 'base rate neglect', see Kahneman and Tversky 1973, p. 237–251.

<sup>30</sup> In a risky situation, people know the possible outcomes and can assign a probability to each of these outcomes. In case of uncertainty, the possible outcomes are unknown or it is not possible to assign probabilities to known outcomes. Ackert and Deaves 2010 p. 6 en 7; Knight 1921, p. 19–20;.

<sup>31</sup> See Bernoulli 1954; Hardman 2009, p. 66. The modern utility theory is developed by Neumann and Morgenstern: Neumann and Morgenstern 1944. The theory of expected value theory is closely connected to the expected utility theory. This theory says that a rational decision-maker should weigh the *value* of outcomes by their probability of outcomes.

alternative to expected utility theory, the so-called prospect theory.<sup>32</sup> Among others, according to prospect theory, people underweigh outcomes that are merely probable in comparison with outcomes that are obtained with certainty.<sup>33</sup> They also developed a modified version of this theory to explain decision making when uncertainty is involved, the cumulative prospect theory.<sup>34</sup> Furthermore, research shows that people use mental shortcuts which are not in line with the normative model. For example, the way in which information is framed influences how people make decisions. The next section focuses on these mental shortcuts.

#### IV. The Positive Model: Homo Sapiens

In 1974, Tversky and Kahneman gave a very detailed description of people's decision-making process in case of uncertainty:

*"Many decisions are based on beliefs concerning the likelihood of uncertain events such as the outcome of an election, the guilt of a defendant, or the future value of the dollar. These beliefs are usually expressed in statements such as "I think that...", "chances are...", "it is unlikely that..." and so forth. Occasionally, beliefs concerning uncertain events are expressed in numerical form as odds or subjective probabilities. What determines such beliefs? How do people assess the probability of an uncertain event or the value of an uncertain quantity? (...) "...people rely on a limited number of heuristic principles which reduce the complex task of assessing probabilities and predicting values to simpler judgemental operations. In general, these heuristics are quite useful, but sometimes they lead to severe and systematic errors."*<sup>35</sup>

As follows from this passage, people use mental processes to reduce cognitive effort, especially when faced with complex problems, just like Captain Kirk from Star Trek. An increase in the complexity of a decision will increase the use of mental shortcuts, such as heuristics. These heuristics enable people to simplify matters and speed up the decision-making process. As a drawback, these mental shortcuts sometimes cause errors: biases.

In this section, various heuristics and biases will be described, more specifically the anchoring and adjustment heuristic, the recognition heuristic, the representativeness heuristic and the availability heuristic. Next, the following biases will be examined:

<sup>32</sup> Kahneman and Tversky 1979; Tversky and Kahneman 1992. However, prospect theory is not 'the final word'. Other alternatives to expected utility have been produced over the years. Amongst others, Allais rebutted one of the assumptions of expected utility theory, Savage's sure-thing principle (Savage 1954) by the Allais paradox: a prospect choice problem which is first proposed by Allais: Allais 1953a; Allais 1953b. Furthermore, Bernouilli described a game, the so-called 'St. Petersburg paradox' which shows that the Expected Value Theory must be wrong: Bernouilli 1954. Furthermore, despite the fact that prospect theory has been the prominent behavioural theory, there is also criticism, see amongst others Hogarth and Reder 1986. Despite this criticism, most results of experiments are consistent with prospect theory.

<sup>33</sup> Kahneman and Tversky 1979, p. 263.

<sup>34</sup> Kahneman and Tversky 1992. Later, this theory was combined with support theory resulting in a two-stage model: Tversky and Koehler 1994; Fox and Tversky 1998. See also Fox and See 2003.

<sup>35</sup> Tversky and Kahneman 1974, p. 1124.

choice and information overload, framing effect, overconfidence bias, confirmation bias, ambiguity aversion and the salience bias. Naturally, this is a selection of heuristics and biases. In making this selection, among others it was taken into account that the market for PRIIPs is very complex, that decision making involves uncertainty, and that most investors have little or no knowledge of and experience with financial products.<sup>36</sup>

#### 4.1. Heuristics

When people consider buying a product, for instance a financial product, they do this with a comparison or estimate in mind. This comparison or estimate is the anchor. When receiving new information about the product, investors need to adjust their initial expectations. The anchor, however, will interfere with this adjustment. Due to this *anchoring and adjustment heuristic*, investors sometimes fail to get a proper understanding of a financial product, since the anchor continuously influences their view of it.

The anchoring and adjustment heuristic can be illustrated by a more general example.<sup>37</sup> In an experiment, people were instructed to take a quick look at the following numbers:

$$1 \times 2 \times 3 \times 4 \times 5 \times 6 \times 7 \times 8$$

Then they were asked to estimate, without explicitly calculating, the final answer of the product of these eight numbers. Most of the participants used the first few numbers of the sequence as an anchor. Therefore, they unconsciously multiplied the first numbers in the sequence. The median answer was 512, whereas the true answer is 40.320. However, when the sequence was shown to them in the following way, the outcome was slightly better:

$$8 \times 7 \times 6 \times 5 \times 4 \times 3 \times 2 \times 1$$

Since the first numbers, and therefore the first steps of multiplication, are higher in the first sequence than in the second one, the former expression is judged larger than the latter. As a result, the median answer people gave in the descending case was higher as well, namely 2250. It appeared that using the product of the first numbers as an anchor still led to insufficient adjustment.

The *recognition heuristic* is the mechanism that leads people to prefer a familiar object over an unfamiliar one.<sup>38</sup> As a result, investors may attach value to a financial product based on recognition and familiarity, which could lead to a suboptimal investment decision. It could also have the effect of making an investment product of a familiar company seem less risky in comparison with an investment product of an unfamiliar company. Furthermore, the recognition heuristic could give rise to *proximity bias*, which is a fear of the unknown leading to proximity driven investments where investments one feels close to are preferred. This bias has various subforms such as *home*

<sup>36</sup> Nevertheless, other heuristics and biases can be relevant as well.

<sup>37</sup> Tversky and Kahneman 1974.

<sup>38</sup> Goldstein and Gigerenzer 2002.



*bias, local bias, own-company bias and own-industry bias.*<sup>39</sup> These biases cause investors to buy a financial product from a local, regional or national business. Therefore, greater gains from international diversification are lost.<sup>40</sup>

In the precontractual phase, an investor tries to assess for example the returns of a financial product. When judging probability, people are sometimes influenced by the *representativeness heuristic*:

*“Representativeness is an assessment of the degree of correspondence between a sample and a population, an instance and a category, an act and an actor or, more generally, between an outcome and a model.”*<sup>41</sup>

This heuristic could lead investors to assess the future performance of a financial product on the basis of its past performance.

Furthermore, Tversky and Kahneman have shown that judgments of frequency sometimes form the basis for estimating probabilities, the so-called *availability heuristic*:

*“A person is said to employ the availability heuristic whenever he estimates frequency or probability by the ease with which instances or associations could be brought to mind. To assess availability it is not necessary to perform the actual operations of retrieval or construction. It suffices to assess the ease with which these operations could be performed, much as the difficulty of a puzzle or mathematical problem can be assessed without considering specific solutions.”*<sup>42</sup>

One of the factors associated with this heuristic relevant to finance is imaginability, meaning that investors tend to perceive an investment as very risky when the risks involved are vividly presented.

#### 4.2. Biases

In general, people prefer choice over no-choice, since keeping our options open could yield us with better outcomes. In this regard, the market for financial products is wonderful: a great number of strongly differing products is offered and this number and diversity keep increasing.<sup>43</sup>

<sup>39</sup> French and Poterba 1991 (home bias), Huberman 2001; Seasholes and Zhu 2010 (local bias), Bernatzi et al. 2007 (own-company bias) and Døskeland and Hvide, 2011 (own-industry bias).

<sup>40</sup> Baker and Nofsinger 2002, p. 101–102.

<sup>41</sup> Tversky and Kahneman 1983, p. 295. Furthermore, Kahneman and Tversky wrote approximately a decade earlier: “A person who follows this heuristic evaluates the probability of an uncertain event, or a sample, by the degree to which it is: (i) similar in essential properties to its parent population; and (ii) reflects the salient features of the process by which it is generated.” Kahneman and Tversky 1972, p. 431.

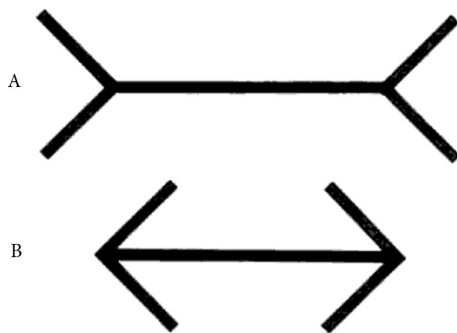
<sup>42</sup> Tversky and Kahneman 1973, p. 208. Criticism of the availability heuristic see e.g. Betsch and Pohl 2002.

<sup>43</sup> E.g. Commission Staff Working Document ‘Impact Assessment Accompanying the Proposal for a Regulation of the European Parliament and of the Council on key information documents for investment products’, SWD(2012) 187, p. 13 and 14.

However, research shows that more choice is not always better.<sup>44</sup> More specifically, people can face difficulties when they need to process a large amount of information. This could lead to confusion and decision avoidance induced by profusion of information or choices that is difficult to assimilate. This behaviour is known as *information overload* or *choice overload*.<sup>45</sup>

This bias is often studied with regard to ‘menu choices’. In one study, a tasting booth with jam was set up inside a grocery store.<sup>46</sup> Two research assistants, dressed as store employees, invited passing customers to ‘come and try our Wilkin and Sons jams’. On the table were either 6 flavours of jam (the limited-selection condition) or 24 different jams (extensive-choice condition). The displays were rotated hourly. The study demonstrated that people liked the idea of ample choice, which was confirmed by the fact that the table with 24 flavours of jam attracted larger crowds. Surprisingly, the table with 6 different jams led to the most sales. The results prove that whereas the provision of a great many choices may seem highly appealing to consumers, it can reduce their motivation to actually make a choice.<sup>47</sup>

Figure 1. Müller-Lyer illusion



According to utility theory, only the outcomes and associated probabilities should determine which option is preferred by the decision maker. However, research shows that the way in which a question is asked or a problem is mentally viewed by a decision maker has a strong impact on the answer given or the decision made (*framing effect*). The manner in which a decision scenario is described and presented is called *framing*. An analogy can be drawn between framing and visual perception, as shown by the *Müller-Lyer illusion* (figure 1).<sup>48</sup> Influenced by the context of the inward or outward arrows, most of the people agree that line A looks longer than line B. However, in fact both lines are the same length.

<sup>44</sup> Iyengar and Lepper 2000, p. 995–1006.

<sup>45</sup> Ackert and Deaves, p. 86 en 362.

<sup>46</sup> Iyengar and Lepper 2000, p. 995–1006.

<sup>47</sup> For several potential limitations to this initial field experiment see Iyengar and Lepper 2000, p. 997 en 998.

<sup>48</sup> Müller-Lyer 1889.

Who are you, Investor

Positive or negative framing of the same problem can have a substantial influence on people's decision-making process. A classical example illustrating this is the Asian Disease scenario.<sup>49</sup> In this study, people were asked to imagine that the U.S. was preparing for the outbreak of an unusual Asian disease, which was expected to kill 600 people. Two alternative programs for combating the disease were proposed, namely a survival frame and a mortality frame:

Survival Frame (N= 152)	Mortality Frame (N= 155)
<ul style="list-style-type: none"> <li>- If Program A is adopted, 200 people will be saved. [72%]</li> <li>- If Program B is adopted, there is 1/3 probability that 600 people will be saved, and 2/3 probability that no people will be saved. [28%]</li> </ul>	<ul style="list-style-type: none"> <li>- If Program A is adopted 400 people will die. [22%]</li> <li>- If Program B is adopted there is 1/3 probability that nobody will die, and 2/3 probability that 600 people will die. [78%]</li> </ul>

The majority of the respondents reading the survival frame preferred option A, which could be characterized as the riskless option as it guarantees that 200 people will be saved compared to the possibility of loss for option B which makes gambling less attractive. Despite the fact that the options in the mortality frame are exactly the same, except that the outcomes are framed in terms of lives that might be lost, respondents reading the mortality frame preferred the risky option.<sup>50</sup> This study illustrates that by changing the phrasing of information, people's preference pattern is changed. When the options are framed in terms of gains, decision makers tend to be *risk averse*, that is, they wish to hold on to what they already have and refuse to gamble. In contrast, if the frame presents the choice in terms of losses, participants tend to be *risk seeking*.

Furthermore, many people are overconfident. The so-called *overconfidence bias* takes account of this overconfidence and addresses the tendency for people to overestimate their knowledge, skills, abilities and the accuracy of their information.<sup>51</sup> Resulting from this, investment decisions are often based on conjecture and not on fundamental value. Research suggests that overconfidence in connection with personal-finance decision-making is widespread. For example, while 65% of the participants in a survey conducted in the United States thought they were very or

<sup>49</sup> Tversky and Kahneman 1981. See also about choice in risky and riskless contexts: Kahneman and Tversky 1984.

<sup>50</sup> Remarkably, McNeil et al. showed that not just laypeople but also experts were susceptible to framing: McNeil, Pauker, Sox and Tversky 1982. Furthermore, studies indicated that positive and negative framing is associated with different levels of cognitive processing, see among others: Dunegan 1993; Gonzales, Dana, Koshino and Just 2005; Payne, Bettman and Johnson 1993. An fMRI study of framing suggest a role for affective influences: De Martino, Kumaran, Seymour and Dolan 2006.

<sup>51</sup> For instance, Alpert and Raiffa 1982 and Block and Harper 1991 about overconfidence in connection with the accuracy of people's estimations. However, some studies document 'underconfidence' (or the 'below average effect'), especially in complex situations, e.g. Kruger 1999. Research suggest that men are much more optimistic than women when it comes to key economic and financial performance indicators, see Jacobsen, Lee and Marquering 2008.

highly knowledgeable about their personal finance, it turned out that many fell short on objective questions'.<sup>52</sup>

According to psychological literature, two factors contribute to overconfidence. First of all, the *illusion of knowledge* is related to the incorrect assumption that a large amount of information leads to a more informed decision, without taking account of the skills of the person interpreting the information.<sup>53</sup> Second, *illusion of control* refers to people's belief to have control over uncontrollable events. In other words, people underestimate the probability of unpleasant events. For instance, they often assume that a negative event, like losing a job, will not happen to them. Research shows that this illusion of control strengthens optimism.<sup>54</sup>

In addition, people have a tendency to search for information that confirms their own opinions and do not search for or ignore evidence that contradicts these beliefs, a phenomenon known as *confirmation bias*.<sup>55</sup> For instance, this could cause people to decide to invest in a financial product and ignore information that is not in favour of the investment.<sup>56</sup> Another consequence could be that investors overlook the risks a financial product entails. Furthermore, mental processing could alter key information in such a way that a specific investment decisions is favoured.

Furthermore, people tend to prefer risks that are known and predictable over unknown risks. This *ambiguity aversion* influences human behaviour in many ways.<sup>57</sup> This bias is demonstrated in the *Ellsberg paradox*.<sup>58</sup> In this classic demonstration, subjects preferred to bet that a red (or black) ball could be drawn from an urn with 50 red balls and 50 black balls to one in which they were only informed that the urn contained 100 balls but the number of black or red balls was unknown. This choice is driven by the fact that people prefer risk to uncertainty.

Finally, people's attention is more easily drawn to conspicuous objects rather than ordinary objects. This propensity is known as the *saliency bias*. It has important implications for the way people should be informed about financial products. After all, by ignoring less prominent information, investors could overlook important parts of an information document like the KID. Instead, they will focus on the information that *looks* important.

## V. The effectiveness of the KID and suggestions for improvement

In this section, the described heuristics and biases will be used to assess the likely effectiveness of information provision by means of the KID when it comes to the two main objectives of

<sup>52</sup> Willis 2008, p. 235–236, in which he refers to a press release on MoneyWise's website, *National MoneyWiSe Survey Shows Americans Are Not Financially Fit*, September 2005. Unfortunately, the report on which this press release is based, is not available on this website.

<sup>53</sup> E.g. Willis 2008, p. 235.

<sup>54</sup> Capuano and Ramsay 2011, p. 133.

<sup>55</sup> This confirmation bias is one of the drivers of overconfidence.

<sup>56</sup> Pompian 2006, p. 187–190.

<sup>57</sup> See amongst others Ahn, Choi, Gale and Kariv 2013, which shows that individual differences exist as well.

<sup>58</sup> Ellsberg 1961.

this information document: improving the comprehensibility and comparability of financial products. In addition, various recommendations for promoting this effectiveness are formulated. For the sake of clarity, the analysis of the effectiveness of the KID and the various recommendations will be described below on the basis of the two purposes of the KID. In this regard, it should be noted that, naturally, there will some overlap.

### **5.1. *Comprehension of complex financial products***

Various heuristics and biases appear to prevent investors from making better investment decisions through the KID. First, the fact that investors prefer products offered by a known or geographically close provider (recognition heuristic) raises the question whether the KID will actually be able to reduce this tendency and adequately inform investors. Conceivably, certain preferences of investors are hard to change by means of such a short information document.

Second, considering the representativeness heuristic, there is a risk that investors make the mistake of considering past performance of a financial product to be a good indicator for its future performance. However, this performance naturally depends on, among others, the development of the underlying assets of the financial product. It is therefore important to make clear to investors that the information in the KID is only helpful to a certain extent when it comes to predicting future returns. In this regard, it could be helpful for the Level 2 instruments to provide that the KID state that past performance offers no guarantees for future results.<sup>59</sup>

Furthermore, in the financial markets, investors are commonly flooded with information.<sup>60</sup> In combination with the large number of financial products this could lead to choice and information overload. Consequently, investors will tend to follow their gut feeling when purchasing a financial product, hardly make any use of financial knowledge and ignore information documents such as the KID. In addition, the KID will initially appear to investors to be yet another information document, and may therefore lead to a greater information overload. It is therefore important for the KID to actually contribute to a greater clarity regarding the financial product. If the KID outlines the most important information about a financial product in an intelligible way and in practice functions as an easy-to-read summary, it might reduce information overload. On the other hand, this could cause investors to perceive the financial product as easy to understand, which, among others, may have the effect of them not analysing the product sufficiently.

However, examination of existing short information documents shows that these often contain complicated language, which could lead consumers to having little incentive to actually make the effort to try to understand the document. Considering the complexity and large number of PRIIPs available this will likely to be a more prominent problem. It is therefore to be welcomed that the KID must be written in a concise manner on a maximum of three sides of A4-sized paper and composed in a language that is clear, succinct and

<sup>59</sup> This is not required as yet. Such a statement is required for the Key Investor Information Document for UCITS: art. 15 paragraph 5, sub a Commission Regulation (EU) No 583/2010.

<sup>60</sup> See e.g. Willis 2008, p. 228–229.

comprehensible.<sup>61</sup> In this context, however, it should be noted that a similar rule also applies to various existing information documents.<sup>62</sup> Examination of these particular documents, however, shows that they also often contain complicated language and jargon. Therefore, this point also requires attention when it comes to the new information document.

The requirement that an explanatory statement emphasizing this purpose be placed underneath the title is therefore to be welcomed.<sup>63</sup> However, research suggests that text above the title often goes unnoticed by investors, something which may be true for statements underneath the title as well.<sup>64</sup> Therefore, the practical usefulness of such a statement is questionable. Besides, before they come across this explanatory statement, investors already need to have taken the step to read the KID. Perhaps herein lies an important role for financial advisors.

However, despite the regulations and recommendations described above, the question remains whether the new information document will sufficiently motivate investors to try to really understand financial products and compare them. Especially, as already noted, since there is such a large number of financial products available. In the literature, Willis also argues that the availability of an overwhelming number of financial products contributes to people frequently not applying a rational decision-making strategy or financial knowledge.<sup>65</sup> The introduction of the KID will not cause a decrease in the number of these financial products, nor diminish their complexity. Instead, this complexity should be reduced by means of an information document. Not least in view of the information overload and choice overload it remains to be seen whether the KID will be effective in informing investors about financial products.

Fourth, the effectiveness of the KID when it comes to informing investors appears to be very much dependent on the ways in which the information is presented and phrased. This seems especially to be of importance considering the availability heuristic, framing effect and the ambiguity aversion bias. When, for instance, risks are presented vividly, investors often consider the risks to be higher than when this is not the case (availability heuristic). It is therefore important for those risks to be described in a similar manner in the various KIDs. After all, if one document describes the risks of a certain financial product much more realistically than another, this could lead to an incorrect assessment, i.e. an overestimation or underestimation of the risk. Standardization of the ways in which for instance the risks and costs of a financial product are presented is therefore a good thing.<sup>66</sup> This also applies to the technical standards that will be developed regarding, among others, the methodology for the presentation of the risks and costs in the KID.<sup>67</sup> Standardization could perhaps be promoted in practice by the provision of a KID

<sup>61</sup> European Parliament and the Council 2014, art. 6 paragraph 4.

<sup>62</sup> E.g. art. 78 paragraph 5 Directive 2009/65/EU.

<sup>63</sup> This statement reads as follows: *"This document provides you with key information about this investment product. It is not marketing material. The information is required by law to help you understand the nature, risks, costs, potential gains and losses of this product and to help you compare it with other products."* (European Parliament and the Council 2014, art. 8 paragraph 2).

<sup>64</sup> Financial Services Authority 2003, p. 26.

<sup>65</sup> Willis 2008, p. 228–229.

<sup>66</sup> European Parliament and the Council 2014, art. 8.

<sup>67</sup> European Parliament and the Council 2014, art. 8 paragraph 5.

generator. In the Netherlands, composers of a Financial Leaflet can use such a computer program for the creation of this document.

Besides, the framing effect also illustrates that positive or negative framing of information can have a substantial influence on people's decision making process. If, for instance, information is framed negatively, an investor will be more inclined to take risks. It is therefore vital for the information in the KID to be balanced, since, for instance an overemphasis on costs and losses can serve as a warning, but can also induce high-risk behaviour in investors. When used in practice, it will become clear if the information in the KID is balanced enough. In addition, considering the framing effect, merely prescribing which information needs to be included in the document and how the document needs to be designed will most likely not suffice. Differences in phrasing among various documents could lead to suboptimal decisions, and therefore defeat the purpose of the KID.<sup>68</sup> A certain standardization of the phrasing of information is therefore recommended. The KID generator proposed above could probably also promote uniform phrasing the largest extent possible.

In addition, people tend to be ambiguity averse and choose risks they know over risks they do not know. This ambiguity aversion influences also the way in which investors take decisions. Considering this bias, it is also important for the description of risks in the various KIDs to take place in a similar manner and that the clarity level concerning risks is the same to the maximum extent possible. After all, if this is not the case, this can for instance lead to investors choosing a predictable greater risk over an unknown, but lower risk. At present, however, it is still unclear how this will be further harmonized through Level 2 instruments.

The KID is not expected to prevent investors from overestimating their own knowledge and being too optimistic about the future (overconfidence bias). Research demonstrates that overconfidence bias can be reduced by the provision of detailed information regarding the actual risks and consequences a certain decision entails.<sup>69</sup> It seems therefore desirable for the information in the KID to be sufficiently specific. This, however, is not likely to be achieved by means of the KID, since it is but a short document.<sup>70</sup> Findings of the examination of existing short information documents are consistent with this observation. Often, the information in these documents is very general with investors being referred to an advisor or other documents for further information. In the KID, it will be allowed to refer to other, more detailed documents, such as the Prospectus.<sup>71</sup> However, this means that consumers actually need to take the step to consult these other documents. Since many consumers overestimate their own financial knowledge as a result of overconfidence bias, it remains to be seen whether they are actually going to do this. Also relevant in this context is the fact that, when presented with choice, people tend to choose the option that needs little or no work.<sup>72</sup>

<sup>68</sup> Whether such a case constitutes a misleading document in the sense of art. 6 European Parliament and Council 2014, is unknown.

<sup>69</sup> Capuano and Ramsay 2011, p. 132–133.

<sup>70</sup> European Parliament and the Council 2014, art. 6 paragraph 4.

<sup>71</sup> European Parliament and the Council 2014, art. 6 paragraph 2.

<sup>72</sup> Capuano and Ramsay 2011, p. 133.

Furthermore, the confirmation bias is expected to have an effect on the way investors perceive information provided by a short information document, as the KID. With regard to this bias, investors tend to select information which is consistent with their own wants, and ignore other information. In addition, mental processing could alter key information in such a way that a specific investment decision is favoured. Combined with the fact that this bias could also lead investors to overlook certain risks involved in a highly wanted financial product it is doubtful whether the KID will give investors a greater insight into a particular financial product. With regard to this bias as well, it seems to be desirable to promote the comparing of financial products by investors and to provide information which is sufficiently concrete in this regard. However, the latter will not be expected to be possible, considering that the limited size of the KID leaves much room for interpretation on the side of the investor. As a consequence, the information could be interpreted in such a way, that it appears to be consistent with the investors' personal preferences and views, whereas this might not be the case objectively.

Considering the salience bias, important for the KID to be effective, is that it needs to *look* like an important document. In this regard, the document should be carefully designed and the content needs to be easy to understand. Among other things, this fits the requirements that the information in the KID must be accurate and clear.<sup>73</sup> The requirement that the KID be clearly distinguishable from marketing materials in this context is also important, as is the requirement that the KID state that it is, in fact, a legally required document.<sup>74</sup> However, regarding the latter requirement, it needs to be noted that, in order to notice this statement, consumers already need to have taken the step to read the KID. Therefore, it remains to be seen whether such a statement makes this document look sufficiently clear compared to other documents.<sup>75</sup> Furthermore, the requirement that the KID be clearly distinguishable from marketing material alone, does not suffice, since the KID also needs to look more *important* than promotional materials. This could perhaps be achieved by placing the logo of the *European Securities and Markets Authority* on it. Further research will have to show whether this will actually lead consumers to regard this document as important.<sup>76</sup>

Finally, considering the salience bias, the most important parts of the KID need to *look* the most important. In fact, if one part stands out more than others, such as for instance an infographic, chances are that another part is overlooked. Knowledge of this bias therefore also offers the opportunity to emphasize the most important information in the KID.

## 5.2. Comparing complex financial products

First, examination of the heuristics and biases demonstrates that it appears to be a good thing that the purpose of the KID is to enable investors to compare financial products.

<sup>73</sup> European Parliament and the Council 2014, art. 6 paragraph 1.

<sup>74</sup> European Parliament and the Council 2014, art. 6 paragraph 2 and art. 8 paragraph 2 respectively.

<sup>75</sup> See footnote 64.

<sup>76</sup> European investors may not be familiar with this authority.



Research shows that increased effort and motivation to compare financial products can reduce the influence of the anchoring and adjustment heuristic:

*“...adjustment is effortful, and so anything that increases a person’s willingness or ability to seek more accurate estimates tends to reduce the magnitude of adjustment-based anchoring biases.”<sup>77</sup>*

The fact that the KID endeavours to make it easier for investors to compare financial products is, considering this heuristic, desirable. This increased comparability reduces for instance the influence of the anchor thus expectedly limiting the role of the anchoring and adjustment heuristic.

However, given the recognition heuristic, it remains to be seen to which extent the KID will actually lead consumers to actually consider foreign products and providers when comparing financial products. After all, financial products from a familiar or geographically close provider are by definition deemed better. It appears unlikely for the KID to change this.

In any event, it is important for consumers to experience as few barriers as possible when it comes to the comparison of financial products. After all, if the comparison of products requires a lot of effort and motivation, investors will be more inclined to use mental shortcuts, such as the described heuristics. In this context, the fact that the content and design of the KID must be standardized seem to be a step in the right direction.<sup>78</sup> In addition, the requirement that the document must be short, concise, and easy to understand, will likely lead to it requiring less effort and motivation of consumers when it comes to comparing financial products.<sup>79</sup> Besides, it is therefore only to be welcomed that the Regulation offer room for the development of calculation tools, allowing investors to easily calculate costs of various products.<sup>80</sup>

The comparability of documents is likely to increase if they can be accessed on a central website.<sup>81</sup> In addition, consideration could be given to the introduction of a product comparison website for complex financial products. At present, comparison websites already exist for many different kinds of products such as car insurance and electronics, and are being visited by many people.<sup>82</sup> Such a website may be helpful to investors as well.

It is furthermore vital for investors themselves to be aware of the importance of comparing financial products. By means of Level 2 instruments could perhaps be stipulated that the document needs to explicitly state that it is of great importance to compare various products in order to be able to gain insight into the risks and possibilities they entail. Additionally, financial advisors could make investors aware of this.

<sup>77</sup> Epley and Gilovich 2006, p. 316.

<sup>78</sup> European Parliament and the Council 2014, recital 17.

<sup>79</sup> European Parliament and the Council 2014, art. 6 paragraph 4.

<sup>80</sup> European Parliament and the Council 2014, recital 36.

<sup>81</sup> And thus not only on the website of the PRIIPs manufacturer, European Parliament and the Council 2014, art. 5 paragraph 1.

<sup>82</sup> A well-known website in the Netherlands is [www.independen.nl](http://www.independen.nl).

## VI. Final Remarks

Finally, research suggest, that the described heuristics and biases cannot be prevented by informing investors about them, and that these errors are also likely to occur when people are trying their best to be careful.<sup>83</sup> An important cause of this appears to be the fact that they are unconscious cognitive processes that are hard to influence. In addition, increasing financial knowledge is not expected to prevent the errors described, since even experts make these errors.<sup>84</sup> It is therefore extra important for policymakers to take these heuristics and biases into account when drafting regulations such as for instance the new information document.

Considering the described heuristics and biases, it seems doubtful whether the new information document will be effective when it comes to informing investors and stimulating them to compare financial products. However, the analysis of the likely effectiveness of the KID and the formulated recommendations are not meant as a final step, but rather as a first exploration of the subject. After all, experimental research offers ways to study more concretely whether, and if so how, the content and design of the KID can actually contribute to consumers being adequately informed and able to compare financial products. Insights from Behavioural Finance, a selection of which were discussed in this paper, allow for a greater predictability of investors' behaviour and therefore hopefully constitute an initial step into the right direction.

It must be noted that this paper does not elaborate on the question to which extent an information document for complex financial products is desirable, since the European legislature has already made the decision to introduce such a document.<sup>85</sup> However, it is questionable whether the recommendations formulated in this paper will actually lead consumers to better understand financial products and compare them with each other. First, these recommendations and the goals of the KID may clash. For example, the documents being short could help improve the comparability of information documents, while, on the other hand, more information could possibly enhance their comprehensibility. Second, a part of the research described is based on laboratory studies and does therefore not necessarily apply to information provision by means of a short information document like the KID. Besides, it should be noted that many heuristics and biases could prevent a proper provision of information through an information document.<sup>86</sup> Only a small number of heuristics and biases were described in this paper. Partly in view of the aforementioned, experimental research could be helpful in exploring whether an

<sup>83</sup> Daniel Kahneman, Nobel laureate, admits in his book (Kahneman 2011, p. 417): "...my intuitive thinking is just as prone to overconfidence, extreme predictions, and the planning fallacy as it was before I made a study of these issues." See also Arkes 1991; Financial Services Authority 2008, p. 54; Hertwig and Ortmann 2003.

<sup>84</sup> See amongst others Hilton 2003; Kahneman 2013.

<sup>85</sup> About the effectiveness of mandated disclosure e.g. Ben-Shahar and Schneider 2014.

<sup>86</sup> For example, Ben-Shahar and Schneider 2014, p. 115: "In short, since biases and heuristics are so many and since people respond so variously, nobody could write mandates that can account for that chaos of thought and passion, all confused". See also Van Boom, Giesen and Verheij 2013, p. 1179–1189 which clearly shows that empirical research and the ensuing results are not always directly applicable when it comes to the drafting of laws and regulations.

information document could actually lead to consumers being adequately informed about a financial product and stimulate them to compare financial products with each other. Probably other alternatives, such as choice architecture, will be more helpful to consumers.<sup>87</sup>

Now, back to the question posed in the title of this paper: ‘Who are you, investor: Mr. Spock, Captain Kirk, or somewhere in between?’ As it turns out, investors are not as rational as Mr. Spock, but have more in common with Captain Kirk. However, when thinking about an answer to this question, the decisions made by Mr. Spock and Captain Kirk do not really matter that much. After all, even though Captain Kirk and Mr. Spock have been known to make many important decisions, they did so within the realm of science *fiction*. The consequences of purchasing an unsuitable financial product are *real* and include for instance becoming homeless or spending one’s old age worrying about money and suffering the ensuing emotional and social consequences. As was established earlier in this paper, insights from Behavioural Finance can help discover who these investors are and how they make decisions. Therefore, despite the apparently dubious link between information disclosure and investor decision making, fine-tuning of the proposed regulation regarding a Key Information Document based on these insights seems at least helpful when it comes to achieving its two main objectives: improving the comprehensibility and comparability of financial products. This can only be achieved by taking into account how investors actually understand and compare financial products.

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<sup>87</sup> E.g. Thaler and Sunstein 2008, p. 81–100.

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